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WHAT IS CLAIMED IS:

1.   A nanometric composite for use in dielectric structures to reduce interfacial polarization, comprising:
   a matrix of polymer; and
   nano- particulate fillers;
wherein internal charge is modified.

2.   A nanometric composite according to claim 1, wherein the polymer is selected from the group consisting of epoxy,   polyolefin,   ethylene   propylene   rubber   and polyetherimide.

3.   A nanometric composite according to claim 1, wherein the filler is selected from the group consisting of inorganic   oxides,   metal   oxides,   titanates,   silicas, particles   coated   with   coupling   agents,   and   nano-sized polymers.

4.   A nanometric composite according to claim 1, wherein particulate size is comparable to polymer chain length so that the particulate and the matrix polymer interact cooperatively.

5.   A nanometric composite according to claim 1, wherein the composite has a filler loading of 10%.

6.   A nanometric composite for use in dielectric structures to reduce interfacial polarization, comprising:
   a matrix of thermoset polymer; and
   nano- particulate fillers;

wherein particulate size is comparable to polymer chain length so that the particulate and the matrix polymer interact cooperatively so that internal charge is modified.

7. A nanometric composite according to claim 6, wherein the polymer is selected from the group consisting of epoxy, polyolefin, ethylene propylene rubber and polyetherimide.

8. A nanometric composite according to claim 6, wherein the filler is selected from the group consisting of inorganic oxides, metal oxides, titanates, silicas, particles coated with coupling agents, and nano-sized polymers.

9. A nanometric composite according to claim 6, wherein the composite has a filler loading of 10%.

10. A dielectric structure comprising a nanometric composite comprising:
    a matrix of polymer; and
    nano- particulate fillers;
    wherein internal charge is modified.

11. A dielectric structure according to claim 10, wherein the polymer is selected from the group consisting of epoxy, polyolefin, ethylene propylene rubber and polyetherimide.

12.   A dielectric structure according to claim 10, wherein the filler is selected from the group consisting of inorganic oxides, metal oxides, titanates, silicas, particles coated with coupling agents, and nano-sized polymers.

13.   A dielectric structure according to claim 10, wherein particulate size is comparable to polymer chain length so that the particulate and the matrix polymer interact cooperatively.

14.   A dielectric structure according to claim 10, wherein the composite has a filler loading of about 2% to about 20%.

15.   A dielectric structure according to claim 10, wherein the composite has a filler loading of about 10%.

16.   A dielectric structure according to claim 12, wherein the composite comprising a nano-size polymer has a filler loading ranging from about 2% to about 40%.